

What is claimed is:

1. A preform multi-layered molding material comprising:
  - a layer of a fibrous reinforcement material, and
  - a layer of a reinforcement resin material, the inherent tack of the reinforcement resin layer holding the fibrous reinforcement material in place, the reinforcement material being at least partially dry with respect to the reinforcement resin, wherein  
5 said reinforcement resin material comprises a first venting structure having venting channels for conducting gases in directions parallel to the plane of the reinforcement layer and perpendicular thereto to allow gases to pass out of the
- 10 molding material via the reinforcement layer during processing to prevent entrapment of gases.
2. A molding material according to Claim 1 wherein the reinforcement layer comprises a further venting structure for allowing gases to pass out of said  
15 molding material via the reinforcement layer during processing.
3. A molding material according to Claim 2 wherein the further venting structure is formed by the reinforcement material.
- 20 4. A molding material according to Claim 1 wherein the venting channels vent interlaminar and/or intralaminar gases.
5. A molding material according to Claim 4 wherein the venting channels are defined between lengthwise extending strips of reinforcement resin material.  
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6. A molding material according to Claim 1 wherein the resin layer is discontinuous, thereby forming the first venting structure.

7. A molding material according to Claim 1 wherein the reinforcement material is unimpregnated by the resin material or is at least partially unimpregnated by the resin material to allow gases to pass out of the molding material.

5 8. A molding material according to Claim 1 wherein the reinforcement material comprises a unidirectional reinforcement material or a non-uniform fibrous reinforcement material.

9. A method of manufacturing a preform multi-layered molding material  
10 comprising the steps of:

providing a layer of a reinforcement material, and  
providing a layer of a reinforcement resin material, said resin material comprising a venting structure to allow gases to pass out of the molding material via the reinforcement layer during processing,

15 said method further comprising the step of locating said reinforcement material in relation to said resin layer, the inherent tack of the reinforcement resin layer holding the reinforcement material in place, such that during processing of the molding material gases pass out of the molding material via the reinforcement layer in directions parallel to the plane of the reinforcement layer and perpendicular thereto.

20 10. A method of forming a gas permeable resin material comprising the steps of:

providing a resin material, and  
providing means for piercing said resin material, said method further comprising the step of providing a venting structure inside the resin material to allow gases to pass out of the resin material during processing by piercing the resin layer.

11. A method according to Claim 10 wherein the method comprises the step of providing means for decreasing the viscosity of the resin material, said method

further comprising the step of decreasing the viscosity of the resin material before forming the first venting structure.

12. A method according to Claim 11 wherein the means for decreasing the  
5 viscosity of the resin comprise heating means.

13. A method according to Claim 12 wherein the heating means is adapted to heat said resin material to a temperature whereby the viscosity of the resin layer is decreased and whereby no curing of the resin layer occurs.

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14. A method according to Claim 10 wherein the resin material is in the form of a film or layer.

15. A resin material comprising a first venting structure adapted to vent gases out of the resin material during processing of the material.

16. A resin material according to Claim 15 wherein the first venting structure comprises venting channels or venting passages.

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17. A method of manufacturing a molding material comprising the steps of: providing a layer of a resin material according to Claim 15, and providing a layer of a reinforcement material,  
said method further comprising the step of locating said resin layer in relation to said reinforcement material.

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18. A multi-layered molding material comprising:  
a layer of a reinforcement material, and

a layer of a resin material, wherein said resin material comprises a first venting structure to allow gases to pass out of said molding material via the reinforcement layer during processing.

5        19. A molding material according to Claim 18 wherein the reinforcement layer comprises a further venting structure for allowing gases to pass out of said molding material via the reinforcement layer during processing.

10      20. A molding material according to Claim 19 wherein the further venting structure is formed by the reinforcement material.

15      21. A molding material according to Claim 18 wherein said first venting structure comprises venting passages or venting channels for venting interlaminar and/or intralaminar gases.

22. A molding material according to Claim 18 wherein the resin layer is discontinuous thereby forming the first venting structure.

23. A molding material according to Claim 18 wherein the reinforcement material is conjoined to the surface of the resin material.

24. A molding material according to Claim 23 wherein the reinforcement material is held in place by the inherent tack of the resin material.

25      25. A molding material according to Claim 18 wherein the reinforcement material is unimpregnated by the resin material or at least partially unimpregnated by the resin material to allow gases to pass out of the molding material.

26. A method of manufacturing a multi-layered molding material comprising the steps of:

providing a layer of a reinforcement material, and

providing a layer of a resin material, said resin material comprising a venting

5 structure to allow gases to pass out of the molding material via the reinforcement layer during processing, said method further comprising locating said reinforcement material in relation to said resin layer.

27. A method of manufacturing a gas permeable resin material comprising

10 the steps of:

providing a resin material, and

providing a first venting structure inside said resin material to allow gases to pass out of said molding material via the reinforcement layer during processing, the method further comprising forming a venting structure in the resin material.

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28. A method according to Claim 27 wherein said method comprises providing piercing means for piercing said resin layer, said method comprising piercing the resin layer to provide the first venting structure.

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29. A method according to Claim 27 wherein the method comprises providing heating means for decreasing the viscosity of the resin material, said method further comprising decreasing the viscosity of the resin material before forming the first venting structure.

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30. A method according to Claim 29 wherein the heating means is adapted to heat said resin layer to a temperature whereby the viscosity of the resin layer is decreased and whereby no curing of the resin layer occurs.